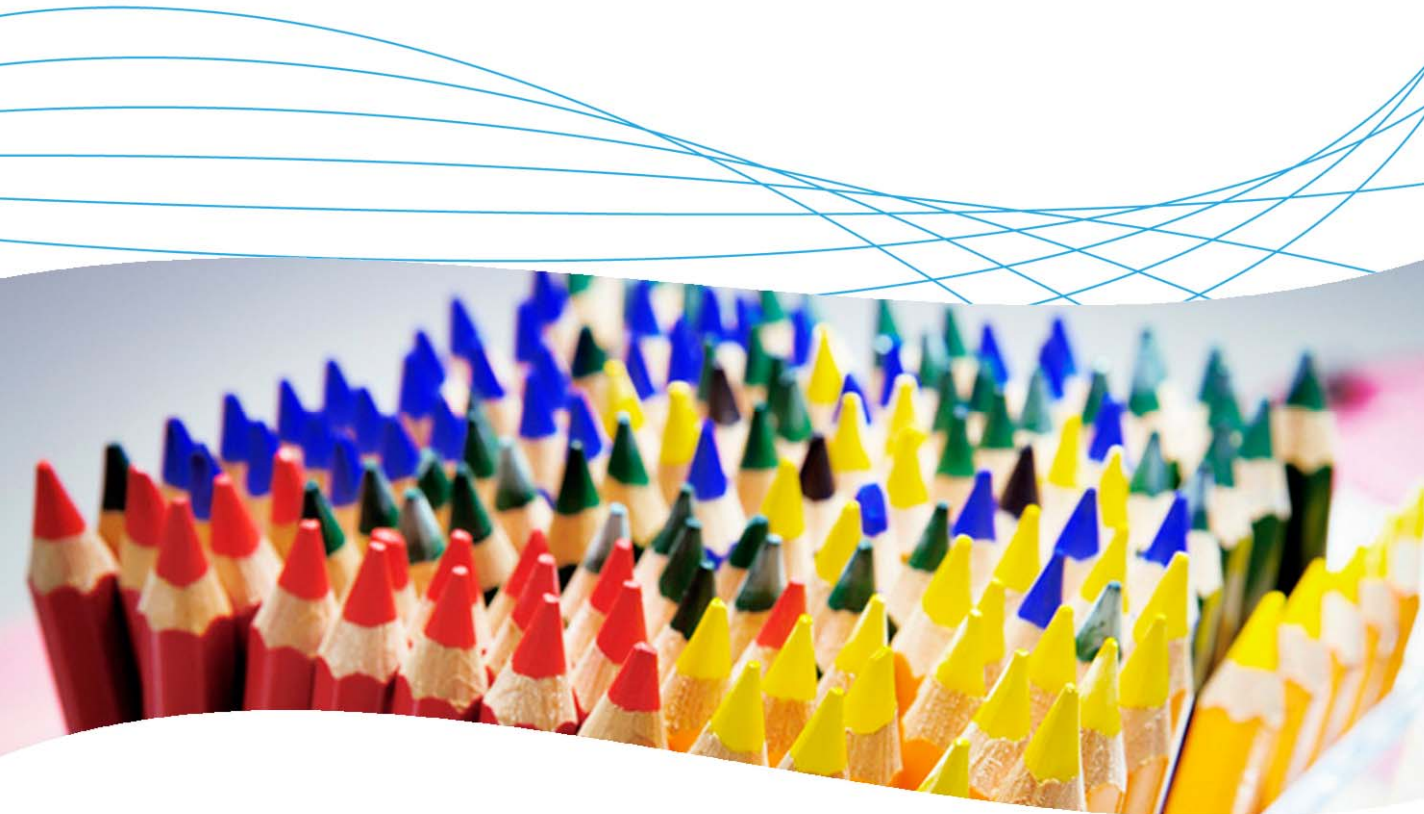


ProCurve switch interoperability with Aastra NexSpan IP terminals and 91xx SIP phones



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1. Introduction

This document shows how ProCurve switches and the Aastra NexSpan IP Terminal or NexSpan 91xx SIP phones interoperate to build a secure and easy-to-manage network. Both rely on standard protocols:

- 802.3af, the standard for Power-over-Ethernet (PoE), enables the switch to allocate up to 15.4W of power per port.
- Quality-of-Service (QoS) mechanisms enable the network to give voice flow—which is sensitive to delay, jitter and packet loss—priority over the data traffic, to guarantee that the communications will continue in case of congestion.
- MAC authentication of the phone provides network access control.

2. Architecture

The platform referenced in this application note contains:

- One or more servers with the following services: Active Directory, DHCP, DNS, Certificate Authority, IAS.
- Latest versions of ProCurve Manager Plus (PCM+) and Identity-Driven Manager (IDM).
- Aastra NeXspan i760 IP Terminal or Aastra NexSpan 9133i SIP phone.
- A ProVision Switch 3500yl or 2610-PWR with the latest firmware version. A similar configuration can also be used with a ProCurve 5400zl series switch or a 8212zl series switch. The configuration commands are identical for these products and the 3500yl.
- A client laptop that can be plugged into the phone dual port for multiple authentication tests or used as a network analyzer (e.g., Wireshark)

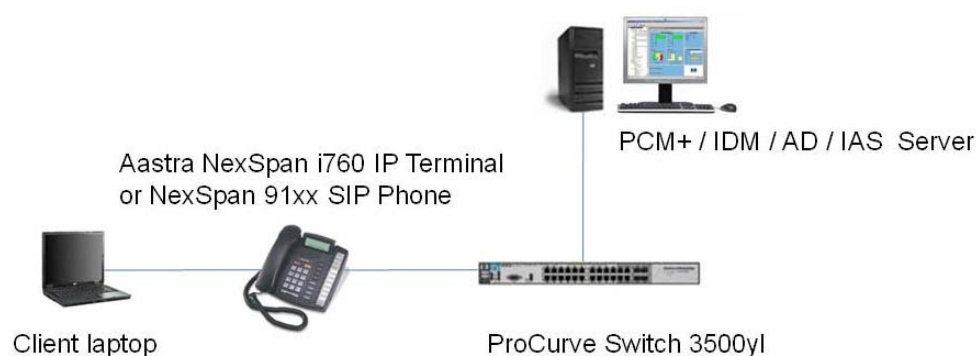


Figure 1. Setup for ProCurve-Aastra NexSpan IP terminal and 91xx SIP phone interoperability

3. Configuration

This section explains how to configure an Aastra phone and the ProCurve switch.

3.1 Check PoE compatibility on ProCurve Switch 3500yl

ProVision switches support standard PoE (802.3af), and so do Aastra phones. When the phone is plugged into a port on the ProCurve Switch 3500yl, the phone boots up.

To view the power consumption of the phone, issue the following command on the switch:

```
show power-over-ethernet X
```

Where X is the port into which the phone is plugged.

3.2 Check PoE compatibility on ProCurve Switch 2610

On a 2610 switch, the command to view power consumption is:

```
show power-management X
```

Where X is the port into which the phone is plugged.

For example, the power consumption of an Aastra SIP 9133i phone is approximately 2 watts:

```
ProCurve Switch 2610-24/12PWR# sh power-management 7
Status and Counters - Port Power Status for port 7
Power Enable      : Yes
Priority          : Low
Detection Status  : Delivering
Configured Type   : 
Power Class       : 0
Over Current Cnt  : 0
Power Denied Cnt  : 1
MPS Absent Cnt   : 0
Short Cnt        : 0
Voltage          : 471 dV
Power            : 1952 mW
Current          : 41 mA
```

The power consumption of an i760 phone is approximately 2.2 watts:

```
ProCurve Switch 2610-24/12PWR# sh power-management 4
Status and Counters - Port Power Status for port 4
Power Enable      : Yes
Priority          : Low
Detection Status  : Delivering
Configured Type   : 
Power Class       : 0
Over Current Cnt  : 0
Power Denied Cnt  : 0
MPS Absent Cnt   : 0
Short Cnt        : 0
Voltage          : 470 dV
Power            : 2217 mW
Current          : 47 mA
```

4. Configuring QoS support

This section explains how to configure Quality of Service parameters.

4.1 Configure QoS on the phone

Quality of Service parameters can be configured on the phone using the phone's web interface.

To configure QoS on the Aastra phone:

1. To access Aastra phone web interface, use a web browser and go to the phone's URL:
<http://<phone-ip-address>>
2. By default the login credentials are:
 - o Username: **admin**
 - o Password: **22222**

- From the Network Settings menu, you can set DSCP values for the different voice and signaling protocols, including SIP, RTP, and RTCP:

Type of Service DSCP	
SIP	46
RTP	46
RTCP	46

4.2 Configure QoS on the switches

The recommended method is to have a dedicated VLAN for voice and configure the QoS parameters for the VLAN. The L2 and DSCP policy advertised are based on the actual QoS configuration for the voice VLAN. By default these values are:

- L2 priority 6
- DSCP 46, which corresponds to the Expedited Forwarding (EF) class

To modify the 802.1p or DSCP values:

```
Vlan <vid> qos priority <0-7>    Sets the 802.1p priority for the VLAN
Vlan <vid> qos dscp-map <codepoint> priority <0-7>

No vlan <vid> qos                  Removes QoS for the VLAN
```

For more information on QoS settings on ProCurve switches, please refer to the following documents:

- For switch 3500yl: <http://cdn.procurve.com/training/Manuals/3500-5400-6200-8200-ATG-Jan08-6-Qos.pdf>
- For switch 2610-POE: <http://www.hp.com/rnd/support/manuals/2610.htm>

5. Network access control via phone MAC authentication

This section explains how to configure MAC authentication. To learn more about MAC authentication and its use, benefits and implementation, please refer to ProCurve Security Application Note AN-S2, *How to configure MAC authentication on a ProCurve switch*.

5.1 Configure the Aastra phone for MAC authentication

For MAC authentication, nothing needs to be configured on the phone itself. However, the phone's MAC address (usually written at the rear of the device) must be entered in Active Directory (or the directory you will use with RADIUS).

- To enter the phone MAC address in Windows Active Directory, create a new user with these credentials:
 - Username: <MAC address of the phone>
 - Password: <MAC address of the phone>

5.2 Configure the ProCurve switch

To configure the ProCurve switch for MAC authentication:

- Configure the switch ports for MAC authentication:

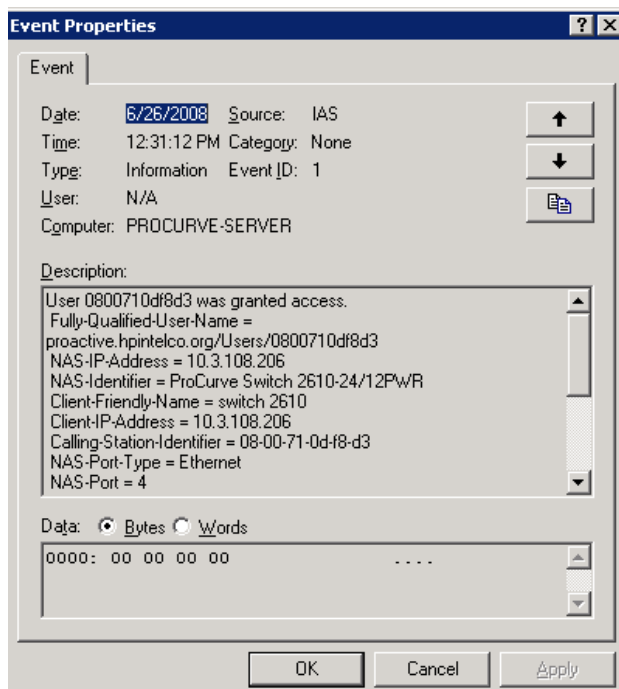
```
# aaa port-access mac-based 4    Selects port 4 to act as a mac-authenticator port
```

2. Enter the RADIUS information in the switch configuration:

```
# radius-server host 10.50.10.170 key procure
```

Gives the switch the address and key of the RADIUS server

3. View the authentication of the phone in the RADIUS log or in IDM:



6. Firmware versions

Firmware versions of the switches used for this application note are as follows:

- K.13.09 for the ProCurve ProVision switches (5406zl, 3500yl, 8212zl)
- R.11.07 for the ProCurve Switch 2610-PWR

Firmware version of the Aastra phones are as follows:

- R5.1B1 for the Aastra NexSpan i760 IP Terminal

7. Reference documents

For further information about how to configure ProCurve switches to support convergence, please refer to the following links:

- For user manuals for ProCurve 3500yl-5400zl-8212zl switches:
<http://www.hp.com/rnd/support/manuals/3500-6200-5400-ChapterFiles.htm>
- For ProCurve Switch 2610 series manuals:
<http://www.hp.com/rnd/support/manuals/2610.htm>
- For PCM+ and IDM manuals:
<http://www.hp.com/rnd/support/manuals/ProCurve-Manager.htm>
<http://www.hp.com/rnd/support/manuals/IDM.htm>
- For information on Aastra phones please refer to the following site:
<http://www.aastra.com/cps/rde/xchg/SID-3D8CCB73-16D91096/04/hs.xsl/19708.htm>

For further information, please visit www.procurve.eu



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4AA2-1622EEE, July 2008